

4 / IDS  
E. Willid  
10-16-00

Patent  
Attorney's Docket No. 033022-004

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	
Yukio SHAKUDA	)	Group Art Unit: 2874 (Expected)
Application No.: Not Assigned	)	Examiner: B. Cushwa (Expected)
Filed: June 27, 2000	)	
For: SEMICONDUCTOR LIGHT EMITTING	)	
DEVICE AND MANUFACTURING	)	
METHOD THEREOF	)	

jc856 U.S. PTO  
09/604097  
06/27/00

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, Applicant hereby submits the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98. The references were cited in the corresponding Japanese application and corresponding U.S. application No. 09/012,790 and U.S. Patent No. 5,751,752. Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited was submitted in the parent application No. 08/528,308, now U.S. Patent No. 5,751,752 and U.S. application No. 09/012,790.

U.S. Application No. 09/166,071 - filed October 5, 1998

U.S. Patent No. 4,890,293 - Dated December 26, 1989

U.S. Patent No. 5,218,613 - Dated June 8, 1993

U.S. Patent No. 4,567,060 - Dated January 28, 1986

U.S. Patent No. 5,210,767 - Dated May 11, 1993

Abstract of Japanese Patent Publication No. 02-129915 - Dated May 7, 1992

European Patent Application No. 477013A2 - Dated March 25, 1992

U.S. Patent No. 4,347,611 - Dated August, 1982

U.S. Patent No. 4,982,409 - Dated January, 1991

Strite et al., "Progress and Prospects for GaN and the III-V Nitride Semiconductors",  
THIN SOLID FILMS, Vol. 231, pp. 197-210 (no month available)

Nakamura et al., "Candela-Class High-Brightness InGaN/AlGaIn Double-Heterostructure Blue-Light-Emitting Diodes", APPLIED PHYSICS LETTERS, Vol. 64, No. 13, pp. 1687-1689

Analysis Report No. 602020 - Dated April 25, 1994

U.S. Patent No. 5,592,502 - Dated January 7, 1997 (Matsumoto et al.)

U.S. Patent No. 5,619,518 - Dated April 8, 1997 (Horie et al.)

Unpublished Analysis Report (Translation) - Surface Analysis Second Group No. 602020

Japanese Journal of Applied Physics, Vol. 32, No. 1A/D - Dated January 15, 1993

Applied Physics Letters, Vol. 64, No. 13 - Dated March 28, 1994

IEEE Journal of Quantum Electronics, Vol. QE-17, No. 9 - Dated September 1981

JP-A 1-217986 - Dated August 31, 1989

JP-A 4-87378 - Dated July 31, 1990

JP-A 4-127595 - Dated April 28, 1992

JP 1-111375 - Dated April 28, 1989

JP-A 6-177423 - Dated May 17, 1993

U.S. Patent No. 5,578,839 - Dated November 26, 1996 (NAKAMURA et al.)

JP-8355 - Dated February 12, 1999

(3) Nitride Mixed Crystal (3 pages) - written agreement against Office Action for Japanese Application 06-219892 on which this application is based

Isamu Akasaki, Advanced Electronics I-1, III-V, Group of Semiconductor Compound (1994), 1<sup>st</sup> Edition, Baifu-kan, p. 345-347

U.S. Patent No. 5,247,533 - Dated September 1993 (OKAZAKI et al.)

U.S. Patent No. 5,751,752 - Dated May 1998 (SHAKUDA)


The analysis report is an unpublished report requested of an outside testing company by Rohm Company, Ltd., the assignee of the present application, analyzing an LED, which Rohm had purchased from its manufacturer, Nichia Chemical Industries. The report is dated April 26, 1994, which is prior to the filing date of the Japanese patent application that serves as the basis of the claim for priority filed in the instant application. The analysis that was done, and is reported in the report, indicated the distribution of elements, including Mg and Zn, in the various layers in the depth dimension of the LED device. The graph attached to the report indicates that contrary to the LED described in the *NAKAMURA et al.* publication previously submitted to the Patent Office in an

earlier-filed IDS, one of the cladding layers of the LED includes aluminum and the other cladding layer of the LED does not include aluminum.

The translation includes a translation of the first three pages of the analysis report. A copy of the two figures showing the graph of the elements was attached to the Japanese language version of the report filed with the IDS of August 18, 1999. It should be noted that the last two pages of the analysis report submitted on August 18, 1999, were in fact the bill and did not comprise part of the analysis report.

The documents are being submitted within 3 months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later, therefore no fee or certification is required under 37 C.F.R. § 1.97(b).

The Examiner's attention is directed to copending application number 09/012,790 and the documents cited therein.

 In accordance with MPEP § 609(c)(2) (July 1998, page 600-112), the Office is requested to return a copy of this Information Disclosure Statement with the Examiner's initials adjacent to this paragraph indicating that this copending application has been considered. By citation to the copending application, confidentiality is not waived and the Office is requested to maintain the confidentiality of the copending application under 35 U.S.C. § 122.

To assist the Examiner, the documents listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Ellen Marcie Emas  
Registration No. 32,131

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

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